

Summary of Charbert Hydrogen Sulfide Data – June 15 - June 21, 2004

The Rhode Island Department of Environmental Management (RI DEM) is currently operating two continuous hydrogen sulfide monitors in the neighborhood adjacent to the Charbert facility in Alton. The monitors are located in a shed at 10 Woodville-Alton Road, across Alton Pond from the facility and in a shed at 16 River Street, adjacent to the Charbert lagoons

As was the case in the previous week, substantially elevated levels of hydrogen sulfide were recorded several times during the period of June 15 – 21 at the River Street location. On five of the six nights, the concentrations were again highest during the late night-early morning hours. However, unlike the previous week, elevated concentrations were also observed in the afternoon of Thursday, June 17th. Concentrations were lower at the Woodville-Alton Road location. Specifically:

- ◆ Hydrogen sulfide levels at the River Street location were elevated from 1:30 to 7:30 AM on Wednesday, June 16th. The highest 10-minute reading during that period, recorded at 4:20 AM, was 29 ppb and the highest one-hour average concentration was 20 ppb. Concentrations at the Woodville-Alton Road location were not elevated that morning except for a reading of 7 ppb at 12:30 AM.
- ◆ Hydrogen sulfide levels at River Street were frequently above 10 ppb between 3:30 and 7:00 AM on Thursday, June 17th. The highest reading during that period was 23 ppb, recorded at 6:50 AM and the highest one-hour average concentration was 18 ppb. Concentrations at the Woodville-Alton Road location were not elevated that morning except for a reading of 10 ppb at 7:30 AM.
- ◆ Concentration above 10 ppb were also frequently recorded throughout the period beginning at about 1:45 PM on the afternoon of Thursday, June 17th through 2:30 AM on Friday, June 18th. The highest reading during this period was 44 ppb, recorded at 2:50 PM on the 17th and the highest one-hour average was 27 ppb. Concentrations at the Woodville-Alton Road location were not elevated during this period or at subsequent times during the week.
- ◆ During the early morning of Saturday, June 19th, elevated hydrogen sulfide concentrations were recorded at the River Street location sporadically between 5:00 and 8:00 AM. The highest concentration recorded during that period was 25 ppb at 7:15 AM, and the highest one-hour concentration was 13 ppb.
- ◆ Hydrogen sulfide levels were elevated at the River Street monitor during several periods between 11:00 PM on Sunday, June 20th and 8:00 AM on Monday, June 21st.

The highest concentration during that period was 38 ppb at 11:00 PM on the 20th and the highest one-hour average concentration was 29 ppb.

In summary, elevated hydrogen sulfide levels were recorded in the late night – early morning hours of five of the six nights between June 15th and June 21st at the River Street location, which is close to the Charbert lagoons. Stagnant wind conditions were generally present during those periods. The hydrogen sulfide levels at that location were also elevated on the afternoon of Thursday, June 17th, beginning at about 2:30 PM. The wind direction at that time was from the south, the direction of the lagoons. Concentrations were lower at the Woodville-Alton Road monitor and, except for the afternoon of June 17th, concentrations at both locations were generally within the background range during late morning and afternoon hours.

Table A shows the maximum 10-minute, one-hour and 24-hour average concentrations (in ppb) measured by each monitor during the latest and previous monitoring periods.

Table A Maximum Hydrogen Sulfide Levels

Monitor	Date	Maximum 10-minute Level	Maximum 1-hour Level (HEALTH nuisance range is >2 - <100 ppb)	Maximum 24-hour Level (HEALTH nuisance range is >2 - < 30 ppb)
River Street	6/7– 6/14/04	78 ppb	49 ppb	7 ppb
	6/15 – 6/21/04	44 ppb	29 ppb	7 ppb
Woodville-Alton Rd	5/13 – 6/7/04	6 ppb	2 ppb	0.2 ppb
	6/6 – 6/14/04	27 ppb	19 ppb	3 ppb
	6/15 – 6/21/04	10 ppb	5 ppb	1 ppb

As with the previous week, the one-hour and 24-hour concentrations during the June 15th – 21st period are in the range of values that are classified as nuisance levels by the Rhode Island Department of Health (HEALTH). These levels would clearly be associated with a noticeable rotten-egg type odor. HEALTH warns that people exposed to nuisance levels of hydrogen sulfide may experience nausea and stress from the odors, an increase in non-specific symptoms and a possible exacerbation of chronic respiratory symptoms in hypersensitive individuals. Levels in this range occurred repeatedly throughout the week at the River Street location.

Hydrogen sulfide monitoring is continuing at the two locations. RI DEM also plans to sample for volatile organic compounds in the area in the coming weeks.

For more information about sampling results, contact Barbara Morin at 222-4700, ext. 7012.